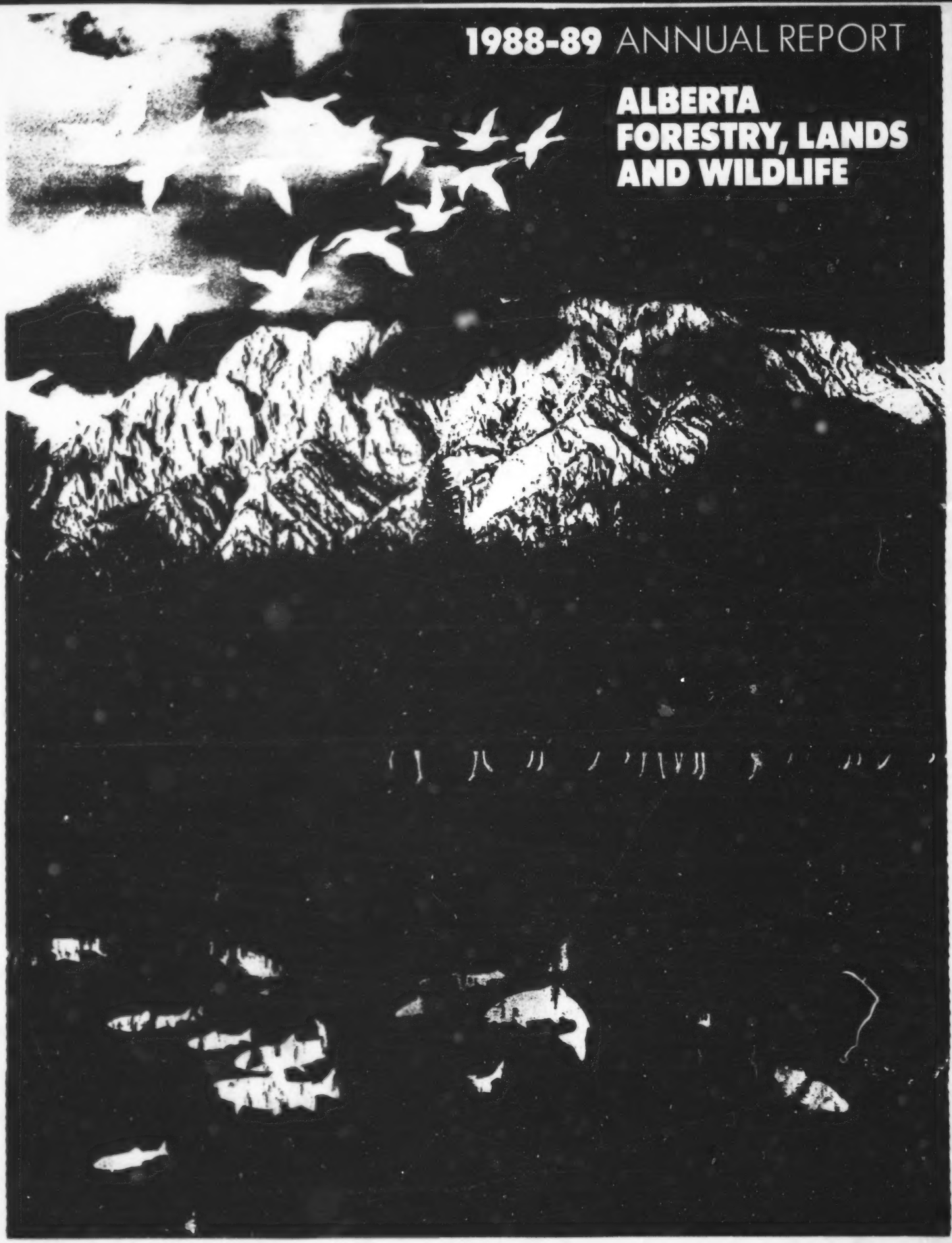
1988-89 ANNUAL REPORT

ALBERTA FORESTRY, LANDS AND WILDLIFE



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Alberta
FORESTRY, LANDS AND WILDLIFE

Office of the Minister

403 Legislature Building, Edmonton, Alberta, Canada T5K 2B6 403/427-3674

June 19, 1990

The Honourable Helen Hunley
Lieutenant Governor of the Province of Alberta

May it please your Honour:

For the information of your Honour and the Legislative Assembly, it is my privilege to present the Annual Report of the Department of Forestry, Lands and Wildlife, for the fiscal year ended March 31, 1989.

Respectfully submitted,

LeRoy Fjordbotten

LeRoy Fjordbotten
Minister of Forestry, Lands and Wildlife

MINISTER'S MESSAGE

The year 1988-89 brought new levels of opportunity and achievement to Alberta Forestry, Lands and Wildlife.

As Minister of Alberta Forestry, Lands and Wildlife, I am grateful to department leadership and staff for their continued dedication and commitment to wise and responsible management of Alberta's natural resources and to those many Albertans in the public and private sectors who contributed significantly, in both advisory capacities and as individual representatives, to this new period of development and vision for the future. The new wave of environmental consciousness throughout our society has reinforced my department's long standing commitment to the highest possible standards of conservation and management of Alberta's precious and vital natural resources. Alberta Forestry, Lands and Wildlife holds these resources in trust for all Albertans for now and for the future.

Ensuring that our abundant forests are sustained in perpetuity through conservation, protection and restoration is a priority of Alberta Forestry, Lands and Wildlife. Reforestation programs were enhanced in 1988-89 by the completion of reforestation surveys on 17,177 hectares of cutover land. Survey results confirmed the consistent success of our reforestation methods and programs: 96% of harvested areas meet provincial reforestation standards by the 10th year after cutting; failed areas must be promptly re-treated.

In the spring and fall of 1988, there were 23,092,383 container and bareroot seedlings shipped from the Pine Ridge provincial nursery at Smoky Lake. In the previous decade, nearly 212 million seedlings have been shipped from Pine Ridge.

During 1988-89, the Alberta Forest Research Advisory Council was established in response to a recommendation of the Canadian Council of Forest Ministers. The Council Membership mainly represents the private forest industry sector as well as federal and provincial governments, the Alberta Research Council and the University of Alberta.

A series of 40 open houses and public meetings were held in northern Alberta to communicate with the public about the government's role in the proposed forest industry developments in those regions. These will be carried on into the 1989-90 fiscal year.

The Forest Industry Development Division of Alberta Forestry, Lands and Wildlife continued to provide energetic assistance and commitment to the forest industry to expand Alberta's forest products export markets and to secure private sector investment in renewable forest resource development. In 1988, in an unprecedented move, the Forest Industry Development Division attracted $3.5 billion of new capital investment in Alberta's forest industry, based largely on new technologies and the utilization of our abundant aspen resource.

The Fish and Wildlife Division introduced a number of new programs in 1988-89 designed to enhance conservation and management of Alberta's wildlife.

There are 11 threatened species in Alberta, and others which are considered rare. The factors limiting the survival of these species vary from natural predation, increased access and agricultural pesticides to loss of habitat. A new program was created to better identify scarce species and plan future management

strategies. Several recovery plans were introduced and a number of habitat enhancement and protection programs were established in 1988-89. A wide range of special interest groups, associations and agencies have been instrumental in many of the habitat enhancement programs:

- Operation Burrowing Owl, a cooperative program of the department, the Alberta Fish and Game Association and private landowners
- the Prairies for Tomorrow program is supported by the World Wildlife Fund
- a Prairie Habitat Joint Venture initiative has been drafted in cooperation with Ducks Unlimited, the Canadian Wildlife Service and Alberta Agriculture
- the North American Waterfowl Management Program, operated in cooperation with several Canadian and United States partners

In 1988-89, the department drafted species management plans for elk, antelope, grizzly bear, cougar and wolf. Species management plans for white-tailed deer and mountain goat were implemented.

Enforcement efforts to sustain populations of endangered or threatened species were enhanced and patrols were increased in areas inhabited by caribou and in waters containing bull trout, sturgeon and spawning walleye stocks. The toll-free Outdoor Observer Line (1-800-642-3800) received 5,480 calls during 1988-89.

The existing 32 grazing reserves in Alberta accommodated 271,254 animal unit months of livestock grazing bringing benefit to over 1,600 patrons. The Range Improvement Program continued to provide assistance to farmers in both the White and Green areas of the province.

During 1988-89, work continued on 21 Integrated Resource Plans: four regional, nine sub-regional and eight local. East Peace, Yellowhead North, Fox Creek-Knight and Wandering River plans were deferred during the year.

The Public Lands Division placed eight new sites totalling 5,458 hectares under protective notation for Natural Area purposes. The Natural Areas Volunteer Stewards continue to make outstanding contributions and are to be commended for their efforts and dedication.

Overall, it has been a year of renewed commitment towards responsible management of Alberta's natural resources, diversification of our economy, expansion of conservation activities and enhanced public communications. Alberta's forest management programs and reforestation success are models of achievements acknowledged across the continent.

LeRoy Fjordbotten
Minister

FORESTRY, LANDS & WILDLIFE

DEPARTMENT OVERVIEW

lberta Forestry, Lands and Wildlife is responsible for managing the province's natural resources — fish and wildlife, public lands and forests. In discharging this mandate, the department adopts a philosophy of Integrated Resource Management, working cooperatively with all resource users and involving the public in planning and management activities. The department consists of five divisions, each with a specific area of responsibility.

Minister of Forestry, Lands and Wildlife The Honourable L.Fjordbotten
Deputy Minister Forestry, Lands and Wildlife
Senior Assistant Deputy Minister Finance and Administration (shared with Dept. of Energy)
Administrative Co-ordinator
Assistant Deputy Minister Land Information Services Division
Senior Director Surveying & Mapping Branch
Director Land Survey Branch
Director Program Support Branch
Director Land Related Information Services Group
Senior Director Resource Information Branch
Assistant Deputy Minister Alberta Forest Service Division
Director Forest Land Use Branch
Director Forest Protection Branch
Director Program Support Branch
Director Reforestation and Reclamation Branch
Director Timber Management Branch
Director Forest Research Branch
10 Forest Headquarters
Assistant Deputy Minister Public Lands Division
Director Land Administration Branch
Director Program Support Branch
Director Land Management Branch
Director Resource Planning Branch
4 Regional Offices
Assistant Deputy Minister Fish & Wildlife Division
Executive Co-ordinator Policy & Co-ordination Unit
Director Fisheries Management Branch
Director Wildlife Management Branch
Director Program Support Branch
Director Habitat Services Branch
Director Enforcement Services Branch
Director Operations Branch
5 Regional Offices
Executive Officer Forest Industry Development Division
Director Forest Industry Branch
Director Financial & Economic Analysis Branch
Director Renewable Resource Development Branch
Manager Forest Products Research Branch
Director Policy Secretariat
Regional Coordination Services
4 Regional Offices
Director Public Communications

Alberta Forest Service has a mandate to manage forested lands in the Green Area which covers two thirds of the province. Alberta Forest Service's many responsibilities include range management; timber management; watershed management; reforestation; reclamation; integrated resource planning; recreation; regulation of petroleum and natural gas exploration and development, oil sands, coal, geophysical and land dispositions, the Junior Forest Warden and Junior Forest Ranger Programs; and protection against fire, disease and insects.

Public Lands manages public lands throughout the White (settled) area of the province. It is also responsible for public land administration and integrated resource planning in both the White and Green areas. Public lands may be leased for grazing, cultivation, recreation, commercial and industrial activities. They may

orestry, Lands and Wildlife consists of five major divisions: Alberta Forest Service; Forest Industry Development Division; Public Lands Division; Land Information Services Division; Fish and Wildlife Division.

be sold for farms, plant sites or various commercial-industrial purposes. Lands are also set aside for grazing reserves and Natural Areas or for use by other departments or agencies.

Fish and Wildlife works to ensure wildlife resources benefit all Albertans. It is a conservation and protection agency which protects endangered and threatened species. It also manages fish and wildlife populations to meet the needs of communities, commercial fishermen and hunters and sports and recreation enthusiasts.

Forest Industry Development was established in 1986 to: assist new and existing forest companies and private investors in utilizing Alberta's forest resources for a variety of forest products; expand Alberta's forest product export markets; and attract investment and private sector involvement in development of all renewable forest resources.

Land Information Services is responsible for basic surveying, mapping and remote sensing information for the province. The division also provides aerial photography, integrated inventory and mapping of natural resources for the department.

In addition to these divisions, a number of branches provide support to the department:

Coordination Services manages activities involving more than one division. During 1988-89, it developed the Correspondence Management Information System (CMIS), an automated system for logging and tracking correspondence from the public. CMIS will allow the department to respond to the public quickly and efficiently.

The department's involvement in Native land claims and related matters is managed by Coordination Services. During 1988-89, it was part of the provincial team negotiating with the Lubicon Lake Band. Coordination Services also drafted a strategy for the implementation of the Prairie Conservation Action Plan, released by the Minister of Forestry, Lands and Wildlife and the World Wildlife Fund Canada in December 1988. The plan encourages public and private groups to conserve the biological diversity of prairie and parkland regions.

In the regions, Coordination Services promotes integrated resource management. Regional coordinators chair interagency committees, creating awareness of departmental programs and promoting public participation in the planning and decision-making process.

Policy Secretariat continues to assist the department's management as we enter the 1990s. The branch analyzes trends and monitors events which affect renewable resource management. It advises senior management on renewable resource management issues and policies and helps the divisions develop effective policies consistent with departmental objectives.

Public Communications advises senior management on all aspects of public relations for the department. Services provided by the branch include communications and program planning; issues management; assistance to the Minister on public relations initiatives, special events; development and placement of electronic and print advertising; media relations and news release preparation; display coordination, design and production; creative design facilitation; print coordination and production; and audio visual production.

Public Communications accesses the vast resources of the Public Affairs Bureau in the coordination of private sector suppliers to assist in bringing each print, graphics, exhibit and audio visual project to a successful conclusion. During 1988-89, the branch was responsible for 137 printing projects, 166 graphics projects, 98 audio visual projects, four display projects, 55 advertising projects and the preparation of 41 news releases.

The department benefits from a number of support services including human resources management; automated data and word processing systems; budgeting, accounting and internal audit functions; and, administrative support including accommodation services, records management and extension services. These services, provided by General Services, Human Resources, Internal Audit and Financial Services, are shared between this department and Alberta Energy.

General Services consists of Corporate Records Management and Extension Services, Crown Land Data Services and Accommodation Services.

Human Resources is responsible for staff recruitment and classification, wage and salary administration, employee relations, staff and organizational development, security, and occupational health and safety. These services are provided through the office in Edmonton and at the Forest Technology School in Hinton.

Internal Audit examines the department's financial activities to ensure internal accounting and operating controls are functioning properly. Emphasis is placed on reviewing techniques used by management to evaluate program efficiency and effectiveness and guarantee results are consistent with objectives.

Financial Services records all revenue, accounting for all receivables and processing all payments. Further responsibilities include developing the department's Expenditure Reporting and Forecasting System (known as DEFIS) which allows the department to better estimate budget expenditures.

FORESTS

Our forests (350,000 square kilometres or 60 per cent of the province) are a shared resource. They provide a retreat for campers, hikers, skiers and photographers. For hunters and fishermen, they are a source of natural wealth. For wildlife, they are a natural habitat. For industry, they are a resource: timber harvesting, oil and gas exploration, mining and grazing all occur within our forests. The goal is to make the best use of forested areas and is accomplished through Integrated Resource Management — the consideration of all resources when land use decisions are made. At each stage of the decision-making process, a comprehensive referral is undertaken to consult with interested stakeholders and other government agencies to ensure that balanced, responsible decisions are made.

Forest Protection

During the 1988 season, fire posed a real threat to Alberta's forests: 872 fires burned over 14,540 hectares of land. Twenty-two per cent of the fires were caused by lightning, 78 per cent were caused by man. Because of our effective detection, pre-fire readiness and suppression abilities, most fires were very small.

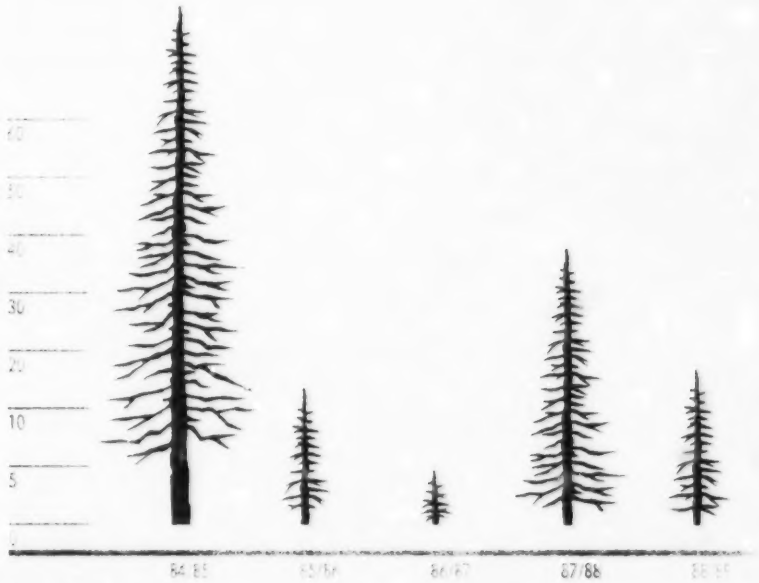
A dry fall in 1987 and a dry, warm winter led to a hazardous 1988 spring with 78 fires by mid-April, compared to 14 the previous year. By the end of April, there had already been 200 forest fires. Despite this high fire incidence, only 1,700 hectares (primarily grass fields) were lost during this period.

The first major fire occurred on May 2, when industrial operations resulted in a wildfire burning out of control. With winds up to 100 kilometres per hour, the fire spread over 1,095 hectares before being controlled. A few weeks later, on May 25, a man-caused fire on the O Chiese Indian Reserve burned over 8,300 hectares, half of it prime timber, before being brought under control. By the end of May, 474 fires had burned 11,700 hectares with costs of protection reaching $13 million.

Rains during June, July and August kept the fire scene quiet, but during the fall, the hazard in forested areas increased. Low moisture conditions coupled with easy access to remote areas caused an increase in the number of hunter-caused fires. During the month of October, 105 fires occurred.

Normally, wildfires do not occur after October 31, but, in 1988, a major wildfire occurred in December. With abnormally high temperatures and winds gusting up to 192 kilometres per hour, a fire south of Hinton burned 1,200 hectares before being brought under control. Seasonal conditions added to the problem of fighting this fire. For example, most water sources were frozen.

During 1988-89, the department added two CL-215s to its fleet of air tankers, bringing the number of CL-215s to four (another two are leased from the federal government). Together with three DC-6s and 11 B-26s, the CL-215s — all equipped with water or a chemical fire retardant—act as back-up support for initial attack resources, complementing the highly trained fire crews which are often rushed by helicopter to the fire scene.



During 1988-89, timber harvested from provincial Crown lands totalled 9,645,039 cubic metres, an increase of 15.7% over 1987-88. The annual allowable cut is approximately 24 million cubic metres. The harvest is primarly used in the manufacture of lumber, panel products and pulp. Sawlogs and peeler logs accounted for 92% while 7% was pulpwood.

During 1988-89, tent caterpillars defoliated 2.76 million hectares of forest. The spruce budworm problem has also been increasing, particularly in Footner Lake, Grande Prairie and Lac La Biche forests.

Timber Management

Alberta's productive forest land covers approximately 202,000 square kilometres. Based on the provincial inventory, Alberta has approximately 2.4 billion cubic metres of standing coniferous and deciduous timber.

Alberta's forest industry is a well-established and thriving contributor to the economy of the province. The industry is a major exporter of high quality softwood lumber and high quality bleached kraft pulp. Recent developments in the province such as oriented strandboard, medium density fibreboard along with chemi-thermo-mechanical pulp (CTMP) have resulted in improved utilization of the overall timber resource, thereby allowing our forests to become steadily more productive.

Timber Dispositions Issued 1988/89

Type	*Number Issued*
Forest Management Agreement	1
Coniferous Timber Quota (CTQ)	4
Deciduous Timber Allocations (DTA)	0
Licences:	
Coniferous, CTQ	28
Deciduous, DTA	5
Commercial Timber Permits:	
Coniferous (green)	77
Coniferous (dead or damaged)	5
Deciduous (green)	4
Deciduous (dead or damaged)	0
Local Timber Permits	1,329
Forest Product Permits (Tree Tags)	22,925
Christmas Tree Permits	8,672
Total timber dispositions issued	***33,050***

During 1988-89, timber harvested from provincial Crown lands totalled 9,645,039 cubic metres, an increase of 15.7% over 1987-88. The annual allowable cut is approximately 24 million cubic metres. The harvest is primarly used in the manufacture of pulp, lumber and panel products. Sawlogs and peeler logs accounted for 92% while 7% was pulpwood.

Coniferous and deciduous timber harvests were 8,348,020 cubic metres and 1,297,019 cubic metres — 87% and 13% of the total harvest — respectively (Figures 20 and 21). The province's forests also provided 37,541 Christmas trees and 10,005 transplants for the public.

A total of 33,050 timber dispositions were issued, a 2.8% decrease over the 33,997 issued in 1987-88. Only 124 of these are considered major dispositions, the remainder being Local Timber, Forest Product and Christmas Tree permits.

Reforestation

The reforestation base budget, the Canada/Alberta Forest Resource Development Agreement (CAFRDA) and the Public Lands Development Program (PLDP) allowed the Alberta Forest Service to conduct numerous silvicultural activities.

Reforestation surveys were completed on 23,466 hectares of cutover land. Results of surveys showed that 96 per cent of harvested areas met provincial reforestation standards in the regulated time required. Silviculture treatments completed by the Alberta Forest Service included mechanical scarification of 10,099 hectares, seeding of 1,758 hectares, planting of 11,936 hectares (18,819,499 seedlings) and thinning of 4,475 hectares. Cone collection by the Alberta Forest Service totalled 2,552 hectolitres of pine, 150 hectolitres of spruce and 215 hectolitres of fir..

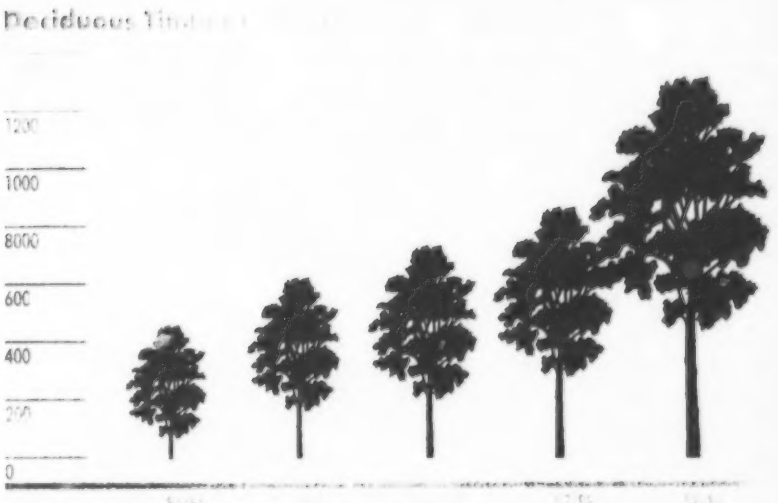
The silviculture program also included the continued maintenance of areas developed under the Maintaining Our Forests (MOF) program.

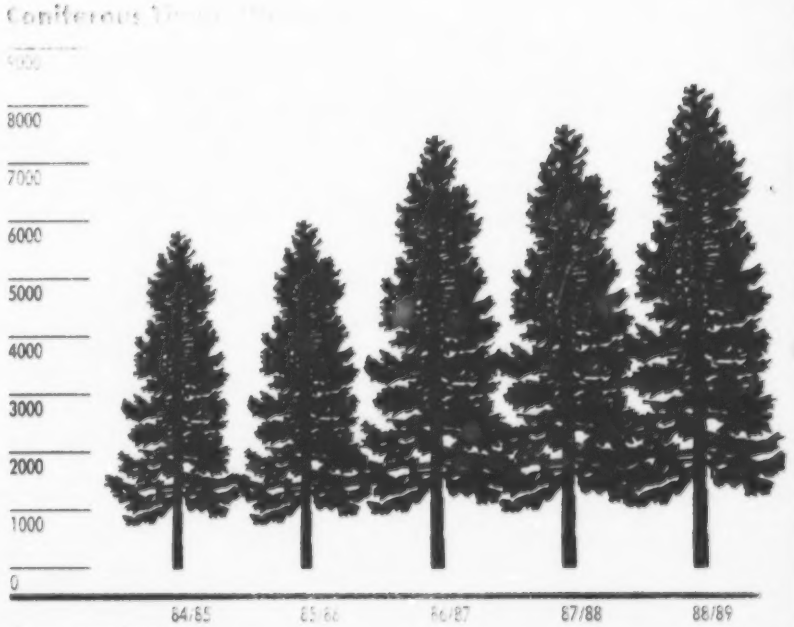
Pine Ridge Forest Nursery

The Alberta Forest Service and forest industry collect cones and send them to the nursery, where seeds are extracted, cleaned, tested and stored. During 1988-89, 10,753 hectolitres of pine cones and 8,227 hectolitres of spruce were processed and 10,739 kilograms of seed were cleaned. Total seed storage was dropped to 40,165 kilograms.

Two types of tree seedlings, bareroot and container, are grown at Pine Ridge Forest Nursery. In 1988-89, there were 16,519,113 container seedlings shipped for planting. The Bareroot Program grows seedlings in prepared fields or nursery beds. The 1988-89 inventory shows 28,232,494 seedlings were in nursery beds, and 6,573,270 were shipped for planting. Combined shipping of container and bareroot seedlings amounted to 23,092,383. From 1978 until the end of 1988-89, a total of 211,923,383 seedlings were shipped from Pine Ridge.

Activities of the forest genetics program included identification of thirty-six superior trees in central and southern Alberta. The genetics seed bank was expanded by 131 new seedlots and 107 seedlots were germination tested. Wood specific gravity tests were completed on samples from 33 trees, and fibre length tests were completed on 94 trees. Experimental stock production consisted of 45,456 seedlings, 941 grafts and 101 rooted cuttings. Ten new research plantings were established, and one new white spruce seed orchard was established jointly with Procter and Gamble Cellulose Ltd.





Source: Alberta Forest Service

Forest Research

During 1988-89, the Alberta Forest Research Advisory Council (AFRAC) was set up to guide and coordinate research within the province. AFRAC membership is composed of representatives from the forest industry, the provincial and federal governments, the Alberta Research Council and the University of Alberta.

In the area of Growth and Yield Research, monitoring of the dynamics of young, managed stands continued with support from the Canada/Alberta Forest Resource Development Agreement. Several cooperative studies between the Forest Research Branch and the Timber

he Alberta Forest Research Advisory Council guides and coordinates forest research within the province. The Council consists of representatives from private industry, provincial and federal governments, the Alberta Research Council and the University of Alberta.

Management Branch were also initiated or continued. The Reforestation Research program contined to evaluate nursery practices and site preparation treatments for possible effects on plantation performance.

Work continued on the site classification program, with the completion of a major portion of the Bow/Crow and Rocky/Clearwater Forests. A field guide describing site classification for this area is expected to be completed in 1990.

Community Relations

The Canada/Alberta mobile exhibit trailer, Alberta's Managed Forests, completed its third year of operation under the Canada/Alberta Forest Resource Development Agreement. Over 53,000 visitors toured the exhibit during its 5-month tour of the White Area of the province.

Another major initiative in the area of public awareness was a series of public information sessions on forest management planning and proposed timber harvesting held in centres near new forest development areas. Beginning February 15, 1989 forty two open houses and nine public meetings were held involving staff and displays from Foresty, Lands and Wildlife divisions and local forest industry.

Forestry Youth Programs

During 1988-89, the Junior Forest Warden Program continued to increase in popularity. Supported by the Alberta Forest Service, this program gives young Albertans opportunities to develop appreciation, awareness, respect and responsibility for our natural environment.

Highlights of the year included forest resource tours, seven outreach programs, an expanded summer camp program, and interprovincial workshops. By the end of the fiscal year, the program had grown to include 690 volunteers and close to 3,000 junior wardens in 78 communities. A member of the Forestry Youth Section was seconded to Newfoundland where he helped establish 15 new clubs.

The Junior Forest Ranger Work Experience Program provided valuable experience and employment in forest management in Alberta to more than 80 young men and women between the ages of 16 and 18. Seven camps were operated within the province. Conservation projects, from tree planting to campsite development and backcountry clean-ups were completed, involving 4,000 man days.

Forest Land Use

Non-timber and Industrial Use

With over 5,000 applications reviewed annually for the Green Area and more than 8,000 associated inspections, as well as the review and approval of over 900 seismic programs covering 46,852 kilometres, use of our forest area for industry is a growing business.

Evaluating proposed activities for their impact on the environment and providing guidelines for development and use help minimize the movement of soil and its potential impact on streams, rivers and lakes. Similarly, acting as a resource in helping control oil and gas spills and communicating the reporting of spills to industry and other government departments helps provide for quick action and follow up.

Coordination of activities is necessary to facilitate orderly development and conservation of Alberta's public lands and to ensure protection and maintenance of environmental quality in the development of both our renewable and non-renewable resources.

Forage Resource

The range resource in the Green Area of the province provides more than 188,000 animal unit months (AUMs) of grazing for domestic livestock. Range management plans, prepared in consultation with various land users, outline ways to enhance forage productivity and the condition of the range resource, as well as how to sustain environmental quality including water, soil and

wildlife resources. Activities such as brush control, seeding, fencing, and water development to improve, or maintain existing conditions on range lands were carried out by the department at a cost of approximately $250,000.

Forest Recreation

Alberta's forest recreation program provided recreational and educational enjoyment for over 2.1 million residents and tourists in 1988-89. This program provides opportunities for extensive forms of recreation such as snowmobiling, cross-country skiing, trail riding and off-highway vehicle use. Camping is facilitated through the operation of 213 forest recreation areas including 20 group camps. Management of the random use of forest lands for both day use and overnight camping is an important aspect of the program.

Forest recreation sites benefitted from the work of local volunteers in 1988-89, with the introduction of a "Volunteer Campground Host" pilot project. Public volunteers took up temporary residence at selected Alberta Forest Service recreation areas as "campground hosts". The role of the campground hosts is to raise the profile of the Alberta Forest Service through their presence, educate the public regarding the Alberta Forest Service recreation program and regulation, and to monitor the use of recreation facilities.

Active monitoring of backcountry use increased in 1988-89 with the growing demand for backcountry recreation opportunities. This monitoring helps ensure that backcountry areas are not overused and that the environment is protected.

Development of plans that help determine the kinds of recreational uses, facilities, and services that are to be provided on forest lands is an important aspect of the recreation program and public involvement is emphasized in developing these plans. In 1988-89, lake management plans were initiated for Smoke, Iosegun and Christina lakes. The public was encouraged to assist in the development of these plans through their participation in public meetings.

Forest Industry Development Division

Forest industry has played an important role in the economy of rural Alberta since the mid-1950s. It has acted as a stabilizing influence, providing a secure source of employment for local communities. Until recently, most of the growth in the forest industry was the result of a steady increase in lumber production which surpassed one billion board feet annually in 1983.

Since the mid-1980s, there has been significant expansion and diversification in the industry. Canada's first oriented-strandboard mill was built at Edson, Alberta, in 1983 and Canada's first medium density fibreboard plant was built at Blue Ridge, Alberta, in 1986. This was followed by a chemi-thermo-mechanical pulp mill at Whitecourt in 1988, Alberta's first pulp mill project since Procter & Gamble at Grande Prairie in 1973.

In 1985, the government embarked on a forest industry diversification strategy for Alberta's economy. One component of this strategy was the increased utilization of Alberta's uncommitted timber resources. Although the province had an established and successful policy of sustained yield management, the opportunities offered by the available forest resources needed to be developed. To achieve its goal, the government had to actively attract new projects but overcome investment barriers such as lack of infrastructure, high transportation costs and the enormous capital required to develop the resource.

Within the Department of Forestry, Lands and Wildlife, the Forest Industry Development Division was established in 1986 to implement the government's forest industry

ecent investments in Alberta's forest industry totalled more than $3.5 billion. To keep Alberta on the leading edge of forest product technology and development, a number of research activities were initiated during 1988-89.

Company	*Location*	*Description*	*Estimated Capital Cost ($)MM*	*Estimated Employment Direct*	*Indirect*
Daishowa Canada Co. Ltd.	Peace River	Greenfield BKP mill	550	630	1260
Alberta Newsprint Co. Ltd.	Whitecourt	Greenfield CTMP/newsprint mill	379	375	750
Weldwood of Canada Ltd.	Hinton	Double capacity of a BKP mill	393	370	740
Weldwood of Canada Ltd.	Hinton	New sawmill	50	120	180
Alberta Energy Co. Ltd.	Slave Lake	Greenfield CTMP mill	168	122	245
Alberta-Pacific Forest Industries Inc.	Athabasca	Greenfield BKP mill and fine paper mill	1300	1300	2600
Procter & Gamble Cellulose Ltd.	Grande Prairie	Expansion of BKP mill and sawmill	365	300	600
Procter & Gamble Cellulose Ltd.	Manning	Sawmill	35	250	375
Sunpine Forest Products Ltd.	Rocky Mountain House	Sawmill complex and fibreboard plant	33	267	400
Total			***3273***	***3734***	***7150***

development strategy. A number of major projects are now underway or awaiting approval including new pulp mills, pulp mill expansions, a newsprint mill, a fine paper mill, new sawmills, and a fibreboard plant. The growth of the industry is creating an expanded market for residual chips produced by sawmills, as well as use of Alberta's poplar species. There are also numerous small-scale projects which involve modernization of existing sawmills and investment in value-added facilities.

Forest Products Research

Forest products research has been an essential element in the development of Alberta's aspen resource which has been considered a nuisance rather than an opportunity for many years. Much of Alberta's more than $3.5 billion of new capital investment is based on the utilization of the aspen resource.

A variety of research projects are aimed at keeping Alberta on the leading edge of forest product technology and development. Activities include assisting new and existing forest product companies and enhancing the utilization (both value and volume) of Alberta's forest resource.

Projects funded at the Alberta Research Council

- Evaluation of limestone deposits in Alberta for production of calcium carbonate fillers.
- Mill trials using mixed species of balsam poplar and aspen.
- Testing of fire retardant chemicals that can be used in oriented-strandboard (OSB).
- Feasibility of using steam in the manufacture of OSB and plywood.

Company	*Description*
VisionSmart Inc.	Development of an electronic lumber grader optimizer
Forintek Canada Corp.	Moisture tolerant resins for the panelboard industry
K.C. Shen Technology International Ltd.	Development of a biomass based resin for OSB from mill wastes
Forest Engineering Research Institute of Canada	Demonstration of field chipping small trees using a chain flail debarker and mobile chipper
Snow Goose Industries	Feasibility of using aspen to manufacture upholstered furniture
Seven S Structures Inc.	Market opportunities for stress skin panels

Current Strategic Projects

Organization	*Project*
University of Alberta	Collection of increment cores for density analysis
D.G. Bell & Associates	Market opportunities for Alberta industry in furniture components
Virginia Polytechnical Institute & State University	Hardwood lumber grading workshop

Renewable Resource Development

In conjunction with Alberta's timber resource strategy, there are parallel efforts in other renewable resource development. These include commercial recreation projects, such as four-season resort complexes, golf courses and lodge developments. The Renewable Resource Branch works with provincial, national and international tourism and recreation industries to promote and facilitate renewable resource investment in Alberta.

WILDLIFE

Protecting threatened and endangered species is a priority for the department. During 1988-89, the Fish and Wildlife Division began developing recovery plans for endangered species — ferruginous hawk, piping plover, peregrine falcon, burrowing owl, wood bison and swift fox. Working to make the public aware of the plight of endangered species, it began developing publications on the 11 endangered species. In Wood Buffalo National Park, Parks Canada and the division have jointly developed a cooperative management plan for the peregrine falcon. In the Grande Cache area, the division is working to restore woodland caribou populations. The Fish and Wildlife Division is also developing a new program to better identify scarce species and plan future management strategies. At the same time, the division is participating in the Alberta Bird Atlas, a program to establish the presence and distribution of breeding birds in Alberta. Approximately 2,000 volunteers are involved in the five year program which began in 1987-88, supported by the Federation of Alberta Naturalists in cooperation with the Fish and Wildlife Division.

Endangered Habitats

A species cannot survive without adequate habitat, food, shelter and space. Through a new volunteer program, Operation Burrowing Owl, the department and the Alberta Fish and Game Association encourage landowners to protect nesting habitat for burrowing owls. Another program, Prairies for Tomorrow, has been initiated in cooperation with the World Wildlife Fund. The purpose of the program is to secure diminishing prairie habitats and develop endangered species recovery plans. On Little Fish Lake, a Prairies for Tomorrow project has already been started to protect the piping plover nesting habitat. In cooperation with Ducks Unlimited, the Canadian Wildlife Service and Alberta Agriculture, the department has drafted a Prairie Habitat Joint Venture initiative to protect habitats of threatened and endangered species.

Wildlife habitats benefit from the Buck for Wildlife Program, started in 1973 by Fish and Wildlife. Private donations and levies attached to the sale of hunting and fishing licences are used to improve fish and wildlife habitats throughout Alberta. Government departments, such as Alberta Environment, and private organizations, such as Ducks Unlimited, will often match Buck for Wildlife funds.

During 1988-89, through the program, 122 fisheries and wildlife habitat enhancement projects were developed. An additional 103 projects were implemented by non-government organizations, such as the Alberta Fish and Game Association, Trout Unlimited and Ducks Unlimited, with funding grants from the Fish and Wildlife Trust Fund. Together, these projects protected and enhanced over 2,196 hectares of fisheries habitat and 17,390 hectares of wildlife habitat. The total expenditure for the Buck for Wildlife Program was $3,832,000.

During the year, in cooperation with several Canadian and American partners (both government and non-government), the department participated in the delivery of the ***North American Waterfowl Management Plan — Prairie Habitat Joint Venture*** in Alberta. The "First Step" project involves a $2 million expenditure to acquire and manage waterfowl habitat in the Buffalo Moraine area of east central Alberta. The project is designed to provide both wildlife benefits to Albertans and agricultural benefits to the local landowner.

The forest habitats of wildlife, such as elk, deer and moose, benefit from enhancement projects and prescribed burns. As the forest matures, the trees close in and block the sunlight, limiting growth of nourishing grasses and plants. Prescribed burns open up the forests, and enhancement projects replenish the forest floor. At Bighorn Creek on the eastern slopes, a timber harvest and elk range enhancement project involved the clearing, seeding and fertilization of 400 hectares of land. Also on the eastern slopes, three controlled burns removed brush from approximately 320 hectares of elk, moose and deer winter range land.

Prescribed burns were also conducted to increase ungulate habitat in the Peace River region. And on the Clearwater River drainage area, the department cleared 121 hectares of elk winter range.

Species Management

The department will develop management plans to ensure fish and wildlife populations are healthy and suit the needs of the community. During 1988-89, the department drafted species management plans for elk, antelope, grizzly bear, cougar and wolf. Species management plans for white-tailed deer and mountain goat were initiated, and a pilot study of fish and wildlife resource use by Treaty Indians was designed and implemented. The Kananaskis Grizzly Bear Study was completed for publication, and a prairie-parkland mule deer harvest strategy (antlered mule deer draw) was implemented in accordance with the mule deer management plan.

A proactive approach was taken to managing beaver problems in the counties of

Wildlife-related recreational activities are popular, and there is strong public support for wildlife conservation. In Alberta, Forestry, Lands and Wildlife has established the Watchable Wildlife project to encourage the public to enjoy Alberta's wildlife.

Lamont, Leduc and Beaver. The approach involves the combination of wetland habitat retention, water management and beaver trapping. The full implementation of the approach is scheduled for Ketchemut Creek in the County of Beaver in 1989-90.

In the northeast region in particular, an increased effort has been made in the area of non-game and endangered species activities, with special emphasis placed on inventories of peregrine falcons and meadowlarks, and bird-nest box projects.

Watchable Wildlife

During the year, Alberta's Watchable Wildlife project was established within Fish and Wildlife's Wildlife Branch. Watchable Wildlife will be developing programs to encourage the public to enjoy Alberta's wildlife. The programs will support non-consumptive uses, such as birdwatching, wildlife photography and attracting wildlife to backyards. A strategic plan for the section has been prepared, and work is proceeding on the publication of a ***Guide to Alberta's Watchable Wildlife Areas.***

The department has continued its involvement with the 1987 National Survey on the Importance of Wildlife to Canadians. Highlights of the 1987 survey will be published in late 1989. ***The Economic Significance of Wildlife*** and ***Trends and the Importance of Wildlife to Canadians,*** also the result of the survey, will be published in 1990.

Hunting and Trapping

The Guide to Big Game Hunting was revised to reflect the regional nature of the big game management program and provide a summary of species management programs. In addition, in 1988, the department repeated the Alberta resident hunter telephone questionnaire to determine hunter harvest and effort. The questionnaire concerned 31 types of hunting licences. One hundred and eight (108) operating archery and fish and game clubs participated in the survey and approximately 75,000 questionnaires were completed.

The overall harvest of furs showed a drastic decline from $7.4 million in 1987-88 to $2.3 million in 1988-89. Of the major species, muskrat harvest decreased 71 per cent, beaver 64 per cent, fox 62 per cent, coyote 61 per cent, mink 60 per cent, and marten 53 per cent. It was the most drastic overall decline since 1940.

The decline has been attributed to world fur prices (especially long-hair furs) which fell 20 to 40 per cent; a 30 per cent decrease in the number of trappers; and unusually heavy snow conditions which came early in the season and restricted access. The limited quota on valuable species, such as lynx and fisher, also decreased the return to trappers. Overproduction of ranch-raised furs, such as mink and fox, contributed to a high inventory of unsold furs. Occasional Paper #4, entitled "Distribution and Status of Selected Mammals in Alberta as Indicated by Trapper Questionnaires in 1987," was published.

During 1988-89, quotas existed for lynx and fisher in most portions of the province, while the season was closed on those species in the remainder of the province. A major effort was made to communicate proposed lynx, fisher, otter and marten quotas with trappers throughout the northern portion of the province. The registration of lynx pelts provided accurate and revealing information which will greatly assist in the management of this species for the 1989-90 season. Regulations were introduced to assure trapping devices are used more humanely.

Education and Training

Trapper Education courses were conducted at 23 locations, with 290 participants concluding the courses. An additional 10 trappers

were given special assistance to increase the use of humane devices and encourage better management practices.

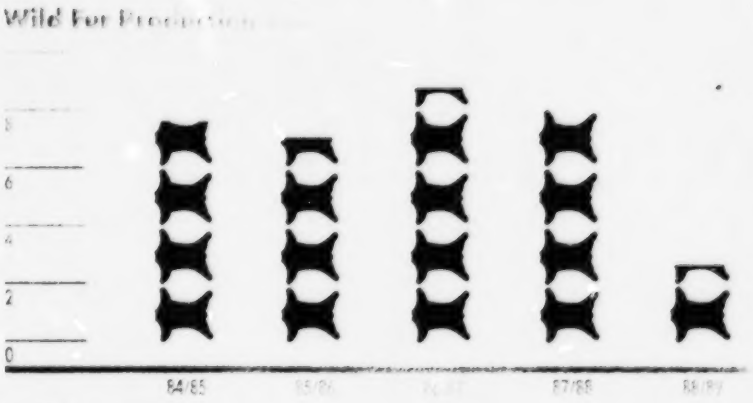
Other public education projects include Conservation and Hunter Education, Fishing Education, and Project WILD. During 1988-89, approximately 4,000 volunteer instructors from every Alberta community presented these programs to over 100,000 Albertans.

Since it became mandatory in 1987, 3,600 potential hunters have taken the First Time Hunter Test. Of these, 60 per cent passed and the balance were encouraged to enrol in the Conservation and Hunter Education Program. Individuals whose hunting privileges have been suspended by court order must pass an exam before obtaining a new licence. This year, 203 candidates passed the violators' test. Almost 3,500 people have taken this test since the program began in 1981.

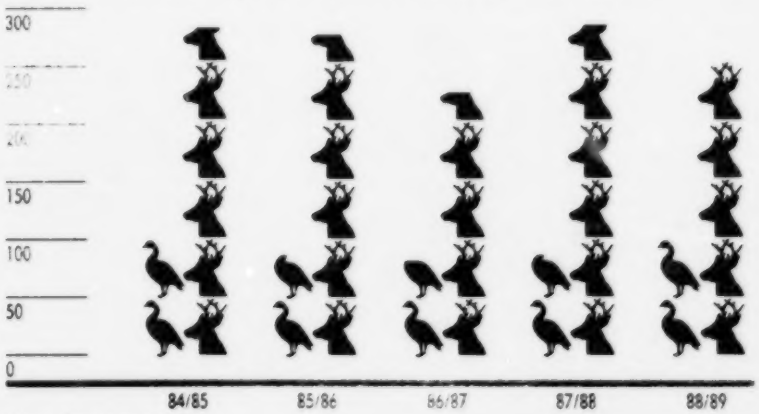
Native Liaison

The Native Liaison Unit proceeded with the development and implementation of the Resource Management Assistant Program. The program provides Native Albertans an opportunity to become familiar with basic fisheries and wildlife management practices. It creates an association between Fish and Wildlife managers and Native people, and allows Native people to achieve certification in resource management. Three program pilot projects were started in 1989.

The Native Liaison unit also introduced Native harvest studies in three northern areas of the province. In addition, it coordinated the distribution of confiscated meat and fish to Native institutions, groups and individuals. It also distributed eagles and eagle parts to Native spiritual elders, band dancers, cultural leaders and educational institutions. And it coordinated the distribution of animal hides, antlers and horns to band leaders and medicine men.



Bird Game and Big Game Licence Sales Thousand Licences



Source: Fish and Wildlife Division

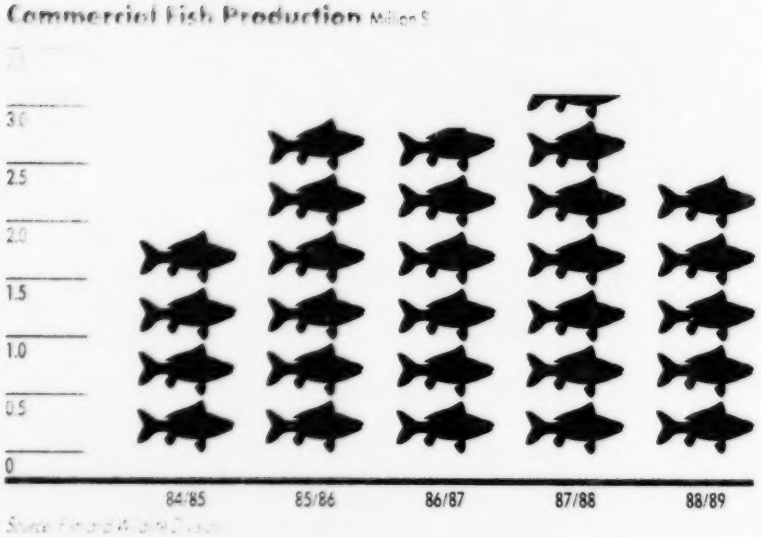
Licence sales for 1988-89 remained strong with 353,966 being sold: 251,460 big game and 92,506 bird game. The majority of recreational licence fees were held at last year's rates.

Fisheries

A new provincial walleye management program was prepared. To be implemented April 1, 1989, the program limits the daily bag limit to three walleye and sets the minimum size at 38 centimetres. Spring spawning closures were also introduced on several important walleye lakes.

On the Bow River near Canmore, fish population and spawning studies have resulted in new spawning season closures and increased angling opportunities. Also near Canmore in Gap Lake, night electro-fishing was successfully used for the first time in a lake to estimate the population of trout.

nforcement of wildlife and fisheries legislation helps to protect endangered or threatened wildlife. Enforcement staff monitor the fur industry and commercial fishing activities, respond to reports of illegal hunting and fishing, and patrol areas inhabited by caribou and waters containing bull trout, sturgeon and spawning walleye stocks.



Commercial Fishing peaked in 1987-88 because of high prices, which have subsequently dropped in 1988-89.

On Little Smoky River, an arctic grayling study showed little movement of fish during the summer months. A trophy arctic grayling management plan was designed for the river. To be implemented April 1, 1989, the plan includes catch-and-release fishing and bait restrictions.

On the Belly, St. Mary's, Waterton and Highwood rivers, several waterflow projects were initiated to determine suitable water flows to protect watershed fisheries. Mitigation plans and instream flow regimes were completed for the Oldman Dam project.

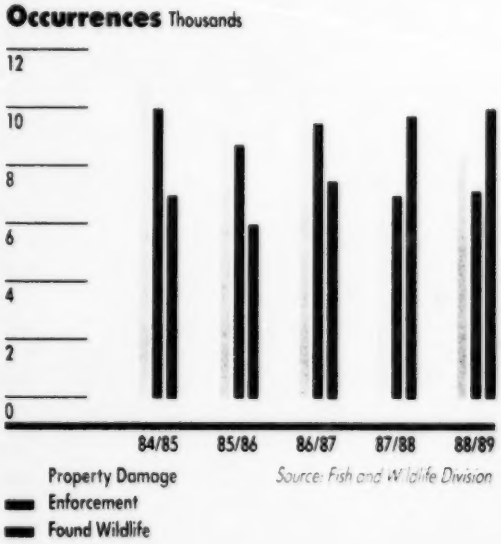
During 1988-89, the Cold Lake Hatchery was closed for a second time due to an IPN Virus outbreak. The virus was determined to be from a Cold Lake water source. The IPN Virus was also detected in the Sam Livingston Hatchery in Calgary and the Raven Brood Trout Station.

Walleye egg collections were completed at Bistcho and Lesser Slave lakes, with 40 million and 30 million eggs collected respectively. And in the southern region, the department participated in an interagency task force to assess the feasibility of using white amur (grass carp) for vegetation control in irrigation canals in southern Alberta.

The 1988-89 commercial harvest of fish was 2,548 tonnes (round weight), with a landed value of $2.8 million, a $0.5 million decrease from 1987-88. The decrease was largely due to the loss of production from Winagami Lake with the winter kill.

Enforcement

During 1988-89, enforcement efforts to sustain populations of endangered or threatened species were stepped up. Patrols and surveillance were intensified in areas inhabited by caribou



and in waters containing bull trout, sturgeon and spawning walleye stocks.

During 1988-89, enforcement staff spent 1,259 hours conducting inspections of commercial establishments dealing with wildlife or fish products. Another 4,817 hours were spent supervising various aspects of the fur industry, and 10,235 hours supervising, monitoring and collecting data on commercial fishing activities.

Environmental damage resulted in 379 occurrences and investigations, and an additional 1,100 hours were spent on environmental surveillance and investigations of complaints.

Occurrences	*1987/88*	*1988/89*
Property Damage	9,614	8,525
Enforcement	7,207	6,918
Found Wildlife	9,948	10,300
Miscellaneous	2,148	1,937
Total	***28,917***	***27,680***

Violations	*1987/88*	*1988/89*
Prosecutions	5,514	5,155
Warnings	3,341	2,778
Total	***8,855***	***7,933***

Outdoor Observer Line	*1987/88*	*1988/89*
Illegal Hunting and Fishing	1,393	1,638
Injured and Found Wildlife	655	840
Non-applicable calls	2,067	3,040
Unknown (wrong number)	361	579
Total	***4,476***	***6,097***

Approximately 94,000 hours were spent on activities relating to enforcement of wildlife and fisheries legislation. A total of 27,680 occurrences were received and responded to, of which 15,443 were for problem wildlife and enforcement.

A total of 15,020 hours were spent responding to 8,525 wildlife occurrences. Bear responses were the most time-consuming at 4,785 hours, followed by ungulates at 2,223 hours, wolves at 1,476 hours and beaver at 1,297 hours. Problem Wildlife Specialists have been appointed in four regions to assist the district officer with the control of nuisance wildlife and to provide training as required.

The toll-free Outdoor Observer line (1-800-642-3800) is available 24 hours a day, 365 days a year. The public is encouraged to use the line to report illegal activities concerning fish, wildlife or habitat. Callers may remain anonymous and all information is confidential. During 1988-89, there were 5,480 calls received on the line. Reports of illegal hunting and fishing totalled 1,638, an 18 per cent increase from 1987-88.

LANDS

The total area of Alberta is 661,185 square kilometres (255,285 square miles) or some 66 million hectares (163 million acres). About 62 per cent is under provincial control as Crown land and more than 60 per cent of all land, largely the forested regions, are not settled.

About 2.85 million hectares (7.04 million acres) of public land are under disposition not leading to title (lease, permit or licence). This includes 2.25 million hectares (5.5 million acres) of grazing leases and permits. Another 0.26 million hectares (0.63 million acres) are under disposition leading to title, e.g., these lands are currently under sale agreement.

A significant portion of Crown land in Alberta has been given protected status, designated for conservation, recreation, ecological and other purposes.

Natural Areas protect sensitive or scenic public land from disturbance and ensure public land is available in a natural state for use by the public for recreation, education and natural heritage-appreciation activities. No new Natural Areas were established in 1988-89 under the Wilderness Areas, Ecological Reserves and Natural Areas Act. However, eight new sites, totalling 5,458 hectares (13,487 acres), were placed under protective notation for Natural Area purposes. By the end of 1988-89, there were 112 designated Natural Areas totalling 30,320 hectares (74,920 acres) and 151 sites totalling 67,974 hectares (167,964 acres) under protective notation.

The Volunteer Steward Program enlists the support of individuals, groups, organizations and corporations to assist with on-site management of Natural Areas. By the end of 1988-89, there were 99 stewards registered with the program.

Disposition Activity Highlights

During 1988-89, there was a 10 per cent decrease in the number of applications relating to oil and gas development, although the number of oil and gas dispositions in effect as of March 31, 1989, increased by eight per cent to 50,853. Mineral surface lease applications decreased to 2030, a drop of 18 per cent from last year's 2,484.

There was also a four per cent decrease in applications for licences of occupation and pipeline agreements. Eighteen applications for coal or oil sands exploration on public land were received. Non-industrial activity also decreased in 1988-89. Miscellaneous lease applications, for example, decreased by six per cent.

Status of Lands in Alberta

Type	*Area (km²)*	*Area (mi.²)*	*% of Alberta*
Privately Owned Land	185,347	71,563	28.0
Public Lands			
Under Disposition Leading to Title	2,603	1,005	0.4
Under Disposition Not Leading to Title[a]	28,293	10,924	4.3
Special Areas[a]	11,797	4,555	1.8
Provincial Parks, Wilderness Areas, Recreation Areas	2,448	945	0.4
Willmore Park, Natural Areas, Ecological Reserves	5,113	1,974	0.8
Metis Settlements	5,053	1,951	0.8
Indian Reserves	6,574	2,538	1.0
Non-Settled Public Lands			
Forested lands within the Green Area[b]	285,670	110,298	43.2
Forest Management Agreement areas	47,415	18,307	7.2
Vacant Public Land within White Area[c]	17,749	6,853	2.6
Federally Controlled Lands (national parks, research stations, Department of National Defence, etc.)	63,123	24,372	9.5
Total Area of Alberta	***661,185***	***255,285***	***100.0***
Land	644,389	248,800	97.5
Water	16,796	6,485	2.5

a. Includes some tax recovery lands.

b. Green Area: Forested lands withdrawn from settlement, managed for forestry and other multiple uses.

c. White Area: The settled area of the province including the settled area of the Peace River region. Public lands in this area are managed for multiple use, including agriculture, pursuant to the Public Lands Act and Regulations.

The Grazing Reserves Program benefits the province's agricultural industry. Through the program, livestock graze on public lands set aside as reserves, allowing farmers and ranchers to use their private lands for crop and hay production. There are now 32 grazing reserves. They cover 0.29 hectares of land and directly benefit 1,637 patrons.

Although there was a 20 per cent decrease in the number of new applications for wild rice growing, interest in this industry continues to stabilize. The number of lakes in production also decreased by 15 per cent, as dispositions were cancelled on lakes found unsuitable for production.

Reclamation

Land leased for industrial purposes must be reclaimed or restored to its natural state. During 1988-89, through funding from the Alberta Heritage Savings Trust Fund, four contracts totalling $34,252 were awarded to reclaim two large abandoned borrow pits, an abandoned quarry pit and to fence a wood preservative chemical spill site. Fourteen other projects involving debris clean-up, erosion control and signage were completed for a total of $17,811.

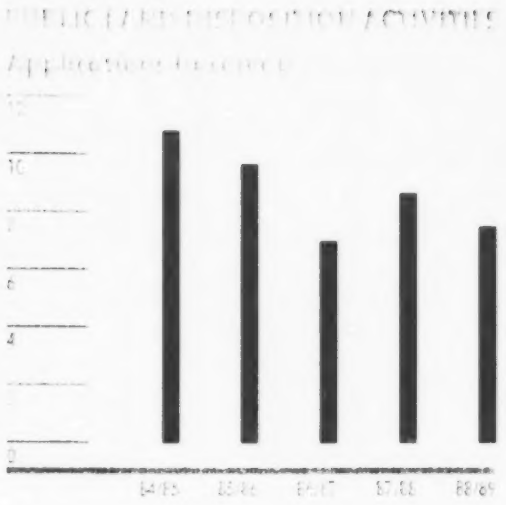
Grazing Reserves

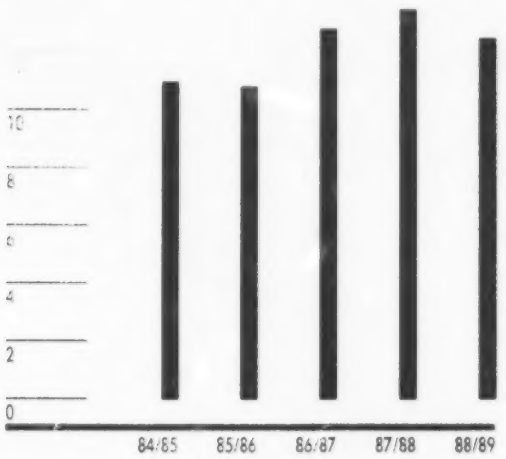
The Grazing Reserves Program provides summer pasture for the livestock of small-scale farmers and ranchers, freeing their privately-owned lands for crop and hay production. The program helps to diversify and stabilize the agricultural industry in the province.

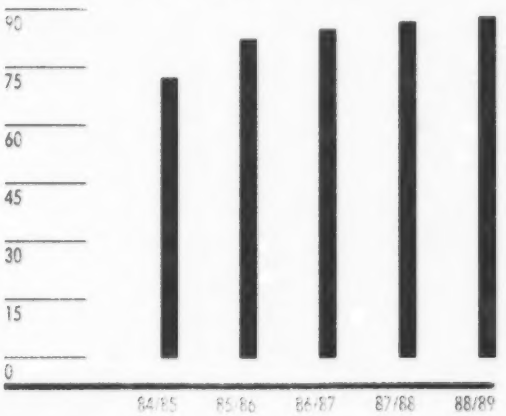
There are 32 grazing reserves in Alberta, covering 0.29 million hectares (0.7 million acres). In 1988, the 32 reserves accommodated 271,254 animal unit months of livestock grazing, which represents 79,173 mature head of livestock. A total of 1,637 patrons benefited from the program.

During 1988-89, the department contributed to the development of grazing reserve areas, with contracts totalling $623,944 for working down, seeding, reseeding, regrowth control, fertilizing and fencing.

A $500,000 Water Supplies Assistance Program was developed for the 1988 season. Funding was provided to develop water wells and other water supply sources on grazing reserves







throughout the province. A total of 39 wells were drilled, 23 new dugouts constructed, 19 dugouts rehabilitated and 38 dugouts were pumped to restore water supplies.

Range Improvement

The Range Improvement Program provides assistance on a cost-shared basis to farmers holding grazing dispositions in both White and Green areas of the province. Livestock producers are assisted in maintaining and increasing the carrying capacity of grazing leases, permits and licences.

Improvements are developed on a planned basis which recognizes the sustained yield of the native and tame forage resource. Each plan incorporates the importance of other multiple uses such as wildlife habitat, forestry and recreation. Projects undertaken on grazing leases include clearing, forage establishment, crossfencing, dugouts, trail development and brush control management.

In the 1988-89 fiscal year, the Range Improvement Program funded 825 ongoing projects and approved 116 new applications for a total of $1.8 million. By the end of the fiscal year, 1,290 Range Improvement Agreements, generally consisting of several range development projects, had been initiated since the beginning of the program. These completed agreements between the grazing disposition holder and the department have provided increased forage or have offset declines in carrying capacities from brush encroachment.

Range Management

The Range Management Program provides professional and technical support and training in range management. The program focuses on range management needs, opportunities and integrated resource management on public grazing land.

In 1988-89, inventories and range resource management plans were developed for

Crown Lands with Protective Status in Alberta

	Area (km²)	*% of Alberta*
Under Legislation		
National Parks	54,084	
Provincial Parks	1,264	
Natural Areas	303	
Forest Land Use Zones	5,643	
Provincial Recreation Areas	112	
Willmore Wilderness Park	4,597	
Wilderness Areas	1,010	
Bird and Wildlife Sanctuaries	693	
Forest Recreation Areas	1,214	
Ecological Reserves	214	
Total	***69,134***	***10.46***
Under Protective Reservation		
Ecological Reserves	128	
Natural Areas	679	
Recreation Areas and Proposed Provincial Parks	515	
Total	***1,322***	***0.20***
Under Military Reservation	***8,517***	***1.29***
Under Protective Zoning		
Eastern Slopes		
Prime Protection Zoning	12,598	
Critical Wildlife Zoning	6,379	
Within Integrated Resource Plans outside the Eastern Slopes	5,340	
Total	***24,317***	***3.68***

Source: Resource Planning Branch as at March 31, 1989

40,500 hectares (approximately 100,000 acres) of White area public grazing lands. The program focus included planned grazing systems for range enhancement and conservation, rangeland monitoring, pasture development and maintenance and biological weed control. Due to the effects of drought conditions and a growing interest in deriving multiple products from public rangelands, a strong demand for extension services was experienced in 1988-89. Results and recommendations from Range Management Program activities were shared with staff and the public through seminars, tours and publications.

Integrated Resource Plans promote public involvement as plans are developed cooperatively with all affected users and interest groups. During 1988-89, Integrated Resource Plans were being developed throughout the province. These included access management, strategic land-use, operational management, wildlife-timber management and lake management plans as well as watershed conservation strategies.

Land Agents Licensing and Foreign Ownership of Land

All land agents in the province are licensed and regulated by the Land Agents Licensing Act and Regulations. Land agents acquire the surface interests on land from landowners. These interests are required for mining operations, oil and gas well sites, power transmission lines, pipelines and related purposes.

The Foreign Ownership of Land Administration enforces the Foreign Ownership of Land Regulations, which control and restrict foreign acquisition of privately owned agricultural and recreational land in the province.

Integrated Resource Planning

During 1988-89, work continued on 21 Integrated Resource Plans (IRPs) — four regional, nine sub-regional and eight local. Four of the sub-regional plans (East Peace, Yellowhead North, Fox Creek-Knight and Wandering River) were deferred during the year. Cabinet approved the Ghost River sub-regional plan and it became the 16th completed plan at the sub-regional and local levels.

Southern Region

In the Southern region, numerous activities were undertaken by the Regional Resource Management Committee (RRMC). Implementation of the Castle River IRP continued. The RRMC addressed five requests for changes to the IRP and produced an annual report on implementation progress for the 1987-88 fiscal year. The Alberta Forest Service commenced development of an access management plan for the Castle River sub-region, taking a cooperative approach which involved all affected users and interest groups. An implementation document was produced for the Livingstone-Porcupine Hills IRP, outlining how the plan was to be put into effect.

Development of ongoing IRPs continued. A terms of reference was produced for the Crowsnest Corridor Local IRP and was publicly reviewed in June 1988 at Blairmore. The Poll Haven Local IRP was reviewed and endorsed to the deputy minister level and at year-end was awaiting final approval. Work continued on the Southern Regional IRP — a terms of reference was endorsed and the planning team commenced development of a draft plan. A joint strategic land-use planning exercise was initiated with the Eastern Irrigation District, beginning with the preparation of a planning proposal and an inventory of critical wildlife habitat.

Various other planning-related activities took place in the region. A detailed analysis of outstanding issues for the Ross Lake Candidate Ecological Reserve was undertaken and a one-day workshop was held for affected parties. Eight planning team meetings were held on the Beehive Natural Area, and a draft operational management plan was finalized for public review. Involvement in the Wild West Program concluded with the release of the Prairie Conservation Action Plan in December 1988, and Regional Coordination Services (RCS) coordinated departmental distribution of the action plan.

Other Southern RRMC activities included production of an annual report for the 1987-88 fiscal year and a workplan for 1988-89. In addition to meeting monthly, the committee held special meetings with the Western Biosphere Reserve Management Committee and the Eastern Irrigation District.

Central Region

In the Central region, a draft plan was produced for the Eden Valley Local IRP, and work continued on the Regional Integrated Resource Policy Plan. The RRMC developed and endorsed a revised terms of reference and produced a review of activities for the 1988 calendar year and a workplan for 1989.

The Eastern Slopes RRMC produced a revised terms of reference and also assisted the Municipal District of Clearwater in their production of a "Red Tape Cutter," a quick reference document of government contacts to assist potential entrepreneurs wanting to develop land.

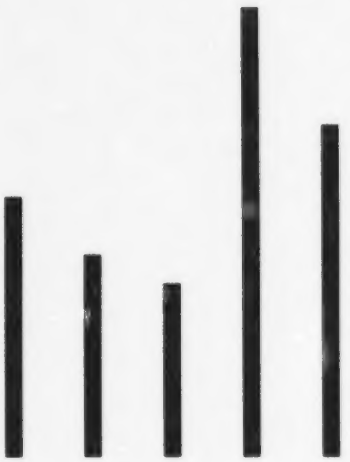
Four IRPs are currently active in the Eastern Slopes region, with another four pending. As well, a significant amount of work was completed on implementation plans in these areas. The first annual reports for four sub-regional IRPs: Nordegg/Red Deer River, Rocky/North Saskatchewan, Brazeau/Pembina and Kananaskis Country were completed. A public review of the Rose Creek Land Use Recommendation was completed as a result of the Rocky/North Saskatchewan plan.

A very successful public involvement session on the Coal Branch plan was conducted, leading to the production of a final plan which specifically addressed the concerns of the people who use the area.

Peace River Region

The RRMC established a set of IRP priorities for future plans in the Peace River region. The Lower Peace Recreation Sites project was completed, and the RRMC continued its involvement in the Peace River Regional Plan and the Grande Prairie County West Local Plan. A decision-making process for the Deadwood-Dixonville area was initiated in response to public input from the communities relating to local timber supplies, agricultural expansion and wildlife management.

Several open houses were attended by staff in the Peace River and Northeast regions to communicate with the public about the department's role in the proposed forest projects in those regions. An integrated approach to wildlife-timber management was initiated with Weldwood, Canfor and Procter & Gamble on their respective Forest Management Agreement areas in the Peace River region.



Northeast Region

The Northeast region continued its development of an IRP which will help secure fish and wildlife resources in the region. The Northeastern Alberta Regional Plan was initiated to make program recommendations in an integrated fashion for the northeastern part of the province. The Cold Lake and Fort McMurray Sub-Regional IRPs were ongoing with detailed input being provided by the public and government agencies. The Christina Lake Management Plan was initiated to make decisions on land-use activities around Christina Lake. At Fort

aps, diagrams, text, displays, inventories and land-use evaluations are developed as needed for departmental initiatives, plans and programs. Inventories can be valuable planning tools.

Chipewyan, an IRP was started to deal with land-use activities surrounding the community of Fort Chipewyan, as a result of the Native land claim settlements in the area.

The Northeast Regional Resource Management Committee held two meetings with the community of Fort Chipewyan to discuss ongoing activities and programs in the region. Throughout the year, several boating restrictions were processed for the Northeast region. The department was involved in trade fairs in Fort McMurray, Bonnyville, Vermilion and Edmonton to promote the department and inform the public about our programs.

The Watershed Conservation Strategy was discussed with various groups in the Northeast region and general acceptance was achieved. This initiative is intended to integrate existing grazing activities with soil, water, fisheries and wildlife conservation objectives on public lands. Implementation of fencing, alternative watering sites and adjusted grazing management systems began in 1988-89 on several selected fish-bearing waters.

The Landowner Habitat Project continued to grow in the Northeast region, especially in the County of Minburn. The program involves the retention of habitats on private lands and has been receiving growing interest from other areas of the region, such as the County of Barrhead. Excellent results have been achieved to retain wetland and upland wildlife habitat.

Surveying and Mapping

During 1988-89, the department's Land Information Services Division (LISD) supported a range of initiatives, plans and programs by providing maps, diagrams, text, displays, natural resource inventories and land-use evaluation projects.

LISD's Graphic Services section received 350 individual requests, requiring a manpower expenditure of approximately 2,500 days. Thematic mapping services were provided on a cost-recovery basis to other government departments. As well, a total of 238 maps were completed through the revolving fund, which included 220 maps for the Chief Electoral Officer, Legislative Assembly.

Other major projects completed were the 1989 Alberta Road Map and 1989 Alberta Weight Guide. A total of 263 aerial photography projects, covering 148,000 square kilometres, were completed. Air photo mosaics for 35 projects, covering 3,600 square kilometres, were produced for departmental clients. One project of unusual interest was the ultra-high-altitude flight conducted by NASA, using a multi-camera and digital sensor package to obtain photographic and digital data from an altitude of 60,000 feet above mean ground elevation. The data is being evaluated for a variety of applications, including map updating.

The Resource Information Branch conducted resource inventories, including a climate analysis in the southern region which confirmed the 1980s have been significantly drier than the 30-year average. A provincial map of regeneration performance zones was compiled, and climate analysis was used to characterize and test the validity of the zones.

Elk habitat improvement was addressed in the Bob Creek area and waterfowl habitat mapped for Bonnie Lake in northeast Alberta. Arable agricultural ratings were produced for Keg River area, and erosion hazard ratings were calculated for part of the Rocky Clearwater Forest. Land use assessments were conducted for several lakeshore management plans.

The Fort McMurray Fringe planning project became a Geographic Information System (GIS) automation pilot project. GIS technology was used to combine data and produce maps. In the future, more projects will be handled similarly, as clients and various internal functional areas become equipped with the necessary GIS resources and expertise.

The Alberta Vegetation Inventory, formerly the White Area Inventory, continued with the successful completion of 114 townships of new interpretation. This program will continue over the next year to make up a total of 500 townships of new vegetation inventory. Terrain and detailed soil studies continued with the completion of three physical land classification projects in the southern region.

Of particular note is the use of traditional physical land classification with Landsat TM data and climate analysis to produce a rangeland grazing potential monitoring system. Contract work to the Alberta Research Council (ARC) provided three new aggregate inventory studies and a bibliography of existing aggregate inventories. The Climate Program maintained two networks of climate data gathering in the Cadotte and Medicine Hat areas. In addition, the program successfully completed the production of 38 automated climate data loggers. This new technology will allow the program to expand its recording period to include the four winter months.

Land-Related Information Systems

For several years, the department's Surveying and Mapping Branch has been involved with a major project, the Land-Related Information Systems (LRIS) Network, an automated data base of land-related information. During 1988-89, an interdepartmental LRIS Management Committee was established to support the existing LRIS Steering Committee and the LRIS Network System Implementation.

A Project Initiation and Project Definition were prepared. A workshop was conducted to support the Standards Management Committee and active work began on standards development. Finally, a microcomputer demonstration of the proposed LRIS Network was developed for presentation to over 150 government users, and a B-Budget proposal was submitted for funding for the LRIS Network development.

During the next year, the market assessment completed in 1987 will be updated, and a study to assess the export potential of the LRIS Network development will be conducted. At the same time, standards development will be continuing, under the LRIS Standards Management Committee, and administrative policy will be developed under the LRIS Administration Management Committee. Both committees are interdepartmental.

The private sector Ministerial Advisory Committee, which provides important input on private sector aspects of the LRIS Network, has established four subcommittees relative to LRIS.

Remote Sensing

In cooperation with the Canada Centre for Remote Sensing, the Alberta Remote Sensing Centre commenced work under the Technology Enhancement Program, undertaking demonstration projects to show the practicality and feasibility of remote sensing for resource management and monitoring. A preliminary review of remote sensing user needs related to upgrading of hardware and software was initiated during the 1988-89 fiscal period. It is expected the study will be completed next year.

Digital Base Mapping

The department is involved in a digital base mapping program. Data used to produce maps becomes a data base compatible with the LRIS network. Modern digital photogrammetric compilation techniques are used by Alberta mapping contractors for the new mapping, and interactive graphics are used to edit the digital maps.

When the program is complete, the entire province will be mapped in digital form, at a scale of 1:20 000. The 1988-89 provincial 1:20 000 digital base mapping program raised mapping coverage to nearly 60 per cent of the province. A total of 1,178 representation and

Sixty per cent of the province is now mapped in digital form at a scale of 1:20 000. When the digital base mapping program is complete, the entire province will be mapped in digital form at that scale.

position files were checked, quality controlled and achieved. A total of 187 hard-copy maps were produced and 1,160 diazo prints were distributed through user requests. Update and maintenance were completed for 144 digital files. Distribution of digital information increased to 2,689 files in 1988-89.

Digital representation files on a 1:1 000 000 scale were completed, along with digital files used to produce printing negatives. Another 23 1:250 000 digital representation files and multicolored maps were completed, bringing the total to 38. Maintenance of completed files continued at this scale. Printing of the 1:750 000 multicolored map was completed using the existing digital file. The accomplishments of this project are a first in Canada.

Another three cities were completed under the 1:20 000 digital base city program leaving three (Edmonton, Calgary and Medicine Hat) to be completed in 1989-90. A new 1:20 000 digital base was completed for use with the personal computer. In total, 223 maps, 474 base maps, 503 bases, 1,101 prints and charts and 316 digital files were created, maintained and distributed to users.

Other base mapping projects included a pilot creating eight 1:50 000 digital files and hard copy base maps using 1:20 000 digital data. Generalization software was used to process certain features and was proven to be very successful. Further production is planned for 1989-90.

Within the Resource Mapping Section of the Resource Information Branch, a Map User's Task Force agreed the provincial digital 1:20 000 map series should be the source of all resource map series access information, as soon as the digital series becomes available. As an interim step, existing conventional 1:50 000 maps are to be updated in areas crucial to departmental map users.

A total of 151 map sheets for the 1:50 000 Interim Series were updated from the most recent photography available. In addition, 43 manuscripts were prepared for updating during the next period. An updated base map and administrative overprints at scales of 1:1 000 000 and 1:500 000 have been printed and are ready for distribution. A 1:1 000 000 digital provincial base map has been produced and conversion of administrative overprints is expected to take place in 1989-90.

The department is also developing a 1:1 000 digital cadastral map base for urban municipalities. A high priority is to complete all municipalities with a population greater than 2,500 as soon as possible. From the 1:1 000 bases, 1:5 000 digital map bases are created and combined with contour (one metre) and orthophoto components.

During 1988-89, 740 new 1:1 000 bases, 38 new 1:5 000 bases and 13 new 1:5 000 new orthophoto/contour cadastral bases were added to the map series. A total of 1,560, 1:1 000 and 124, 1:5 000 bases were revised. In addition, 1,519 digital files and 309 hard copy bases were distributed to users.

Three mapping contracts were awarded for contour and orthophoto mapping of High Level, High Prairie and Drumheller/I.D. No. 7. The Parcel Mapping Specifications document was completed and Special Warrant Funding of $750,000 was available in November 1988. Prequalification testing was completed with 87 firms participating. Forty-eight firms submitted reports with 34 satisfactorily completing the prequalification test. With the 34 firms, contracts (covering an area of approximately 100 townships) were prepared with the results due at the end of March 1989.

Township System Coordination

Alberta Township System Coordination was provided for four additional 1:250 000 NTS map sheets in 1988-89, bringing the program to 75 per cent completion. Under the field tie portion of the program, ties were completed to

58 township corners in the areas west and north of Edmonton. The coordinates computation portion of the program was completed in four additional 1:250 000 NTS map sheets: 82G, 84F, 84N, 84O.

Survey Control

The department's survey control network consists of 6,800 survey control markers placed throughout the entire province at a spacing of approximately 10 x 20 kilometres. During 1988-89, 341 Alberta Survey Control (ASC) markers were prepared for remeasuring by Inertial Survey System (ISS), and 461 site surveys and cadastral ties to the Alberta Township system (ATS) were completed. Site surveys are now 45 per cent completed, cadastral ties 75 per cent complete.

The second order control network from Red Deer to Rocky Mountain House was remeasured with brace measurements to ISS markers. Final co-ordinates have now been received and are being input into the MASCOT computing system. Additional brace measurements were made in the Zama Lake and Dunvegan control network. Two forestry lookout towers were surveyed as part of the control activities. Old aerial photography target material was removed from 802 sites.

All work remaining under the original 10-year schedule has now been put into the maintenance program, and site surveys and cadastral ties will be completed on an ongoing basis as maintenance work is completed.

The Geodetic Computations group, responsible for survey control data, initiated 89 projects during 1988-89. Fifty projects were completed during the fiscal year. Seven hundred and 79 survey control markers were added and 93 survey control markers revised. Urban projects undertaken included northeast Edmonton annexation, County of Strathcona, Slave Lake and numerous projects resulting from maintenance activities under the municipal program.

Other activities included the maintenance of the MASCOT Phase I computing system, some progress on the development of the MASCOT Phase II, continued block validation in support of North American Datum '83 (NAD), continued public awareness of NAD '83 and progress on urban Global Positioning System (GPS) specifications.

During 1988-89 the Town of Slave Lake entered into agreement under the Municipal Integrated Surveying and Mapping (MISAM) Program with the establishment of 100 Alberta Survey Control Markers (ASCMs). Existing MISAM programs were extended in the City of Edmonton and the County of Strathcona, and the MISAM Program is now under formal agreement with 66 municipalities in the province. New ASCMs totalling 150 were established in northeast Edmonton, while 25 new ASCMs were established in the County of Strathcona.

Service agreements with five consultants provided the network reconnaissance, design, marker installation, and measurement of the Slave Lake Project, and ASC measurements for northeast Edmonton and Strathcona County projects. The department also approved the design, issued instructions and edited field returns for 49 ASC projects initiated by municipalities under the MISAM program in meeting their obligation to replace destroyed markers and extend new markers into newly developed areas.

A total of 250 new ASCM's were established. In-house crews provided ASC measurements in 16 municipalities to strengthen existing networks in preparation for NAD '83. In total, 525 new ASCM's were established and 1,420 existing ASCM's were occupied to integrate new markers this year under a total of 72 ASC projects.

Other activities undertaken in 1988-89, included one week of instruction to University of Alberta Engineering students on the use of Electronic Distance Measuring (EDM) systems and the construction of a Three Dimensional Positioning Basenet for assessing 3-D surveying systems such as the Global Positioning System

The new Surveys Act and Survey Regulation came into force, June 8, 1988. The Act will be administered by the Director of Surveys, under the direction of the Minister. The Boundary Commissioner, under the Boundary Surveys Act, is responsible for surveys of the boundary between Alberta and British Columbia, and the boundary between Alberta and the Northwest Territories.

(GPS). The department completed maintenance of the coordinate bases for 10 cities with an additional 67, 1:1 000 new map sheets completed in Edmonton annexed areas. Coordinate bases for three new municipalities and one improvement district were completed. Maintenance on another 32 municipalities was brought up to date.

During the year, the department examined 420 new survey plans for compliance with related legislation, and approximately 4,900 survey plans were entered into the Land Survey Document System (LSDS) and indexed on hard-copy township diagrams. (This compares to 521 new survey plans examined and approximately 4,700 plans entered into the LSDS in fiscal year 1987-88.) Assistance and guidance on matters relating to land surveying were provided to the public, members of the Alberta Land Surveyor's Association and other government agencies.

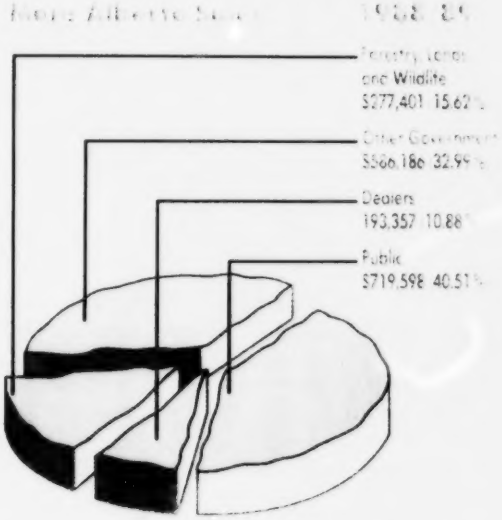
A total of 16 inspection surveys were conducted and one resurvey is in progress. The new Surveys Act, together with the Survey Regulation, came into force on June 8, 1988. Administration of the Act is delegated to the Director of Surveys under the direction of the Minister. Responsibility for maintenance and new surveys of the Alberta/British Columbia and North West Territories/Alberta boundaries is delegated to the Boundary Commissioner under the Boundary Surveys Act.

Maps Alberta

Maps Alberta, part of the department's Land Information Services Division (LISD), distributes maps and aerial photos produced by the provincial and federal government. During 1988-89, the LISD Revolving Fund continued to break even, according to the objective set out at inception. No major pricing changes or elimination of services or products were required.

Inventory levels were reduced 25 per cent during the year. Successful negotiations took place with Energy, Mines and Resources Canada to return approximately $48,000 of federal mapping products, long deemed in excess of actual need. To expand the types of products offered, Maps Alberta has stocked several series produced by the Province of British Columbia.

During 1988-89, Maps Alberta took over responsibility for the "quick print" photo service through the use of a Canon color laser copier. The only copier of its kind within the provincial government, it allows Maps Alberta to provide an enhanced level of service to former Itek print users, as well as many copying services not economically provided by the private sector to government departments. Continued efforts have and are being made to expand use within the government sector. Actual sales for the year were approximately $136,000 with strong indications that increases in activity will continue into the next fiscal year.



An analysis of sales for the fiscal year indicated $863,587 or 49 per cent of total sales were to government including Forestry, Lands and Wildlife, compared to 30 per cent in the previous year. Sales to the public $912,955 represented 51 per cent of total sales, a 19 per cent decrease from $739,190 in the previous year.